

REMARKS

Claims 1-42 are pending. Claims 1, 12, 23, 34 and 42 have been amended.

In paragraph 15 on page 7 of the Office Action, claims 12-41 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

More particularly, claim 12 was rejected because the Office Action alleges that there is no relationship made between the host and the backplane or the second interface associated with the backplane. The Office Action indicates that it is not clear whether communication is involved.

With regard to claims 23 and 34, the Office Action alleges that there is no relationship between cache locking in the preamble to anything else in the claim.

Applicants respectfully traverse the rejection. First, in Applicants' previous response, claims 23 and 34 were amended and the phrase regarding locking in the preamble was deleted. Thus, Applicants respectfully submit that the continued rejection of claims 23 and 34 is improper and moot in view of Applicants' previous response.

With regard to claim 12, the scope of the claim must be clear to a hypothetical person possessing the ordinary level of skill in the pertinent art and whether one skilled in the art would understand the bounds of the claim when read in light of the specification. If the claims read in light of the specification reasonable apprise those skilled in the art of the scope of the invention, 35 U.S.C. § 112, second paragraph requires no more.

Turning to the specification and drawings, Fig. 1 clearly shows a host coupled to controller 118 and shows the backplane coupled to the controllers and the storage device. Moreover, on page 14, line 14 to page 15, line 7, the specification clearly describes controllers 118 and 120 that are in turn connected to disk array 108 via bus (or busses) 150 and to host

computer 102 via bus 154. Further, the specification states that one of ordinary skill in the art will readily recognize that interface bus 150 between the multiple active disk array controllers 118 and 120 and disk array 108 may be any of several industry standard interface busses and that circuits for controlling bus 150 are well known to those of ordinary skill in the art. Still further, the specification states that interface bus 154 may be any of several standard industry interface busses including SCSI, Ethernet (LAN), Token Ring (LAN), etc. and that circuits appropriate for controlling bus 154 are well known to those of ordinary skill in the art.

Accordingly, it is clear that the host communicates with controller 118 via and standard interfaces over bus 154 and that controllers 118 and 120 communicate with the storage devices 110 in disk array 108 via the backplane and standard interfaces.

Therefore, Applicants respectfully submit that the claims are definite and meet the requirements of 35 U.S.C. § 112, second paragraph.

On page 4 of the Office Action, claims 1-11 and 23-42 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,862,668 to McKean et al. in view of Moriyama et al. On page 6 of the Office Action, claims 12-22 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,862,668 to McKean et al. in view of Moriyama et al.

In paragraph 16 on page 8 of the Office Action, claims 1-8, 10-11, 23-30 and 32-42 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Simpson in view of Moriyama et al. The Office Action admits that Simpson also fails to teach using data objects that represent discrete partitions of the task to be performed and states for each partition.

In paragraph 41 on page 13 of the Office Action, claims 9 and 31 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Simpson in view of Moriyama et al. and further in view of Stuttard et al.

In paragraph 43 on page 14 of the Office Action, claims 12-19 and 21-22 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Pecone in view of Moriyama et al. The Office Action admits that Pecone also fails to teach using data objects that represent discrete partitions of the task to be performed and states for each partition.

In paragraph 47 on page 15 of the Office Action, claim 20 was rejected under 35 U.S.C. § 103 (a) as being unpatentable over Simpson in view of Moriyama et al. and further in view of Stuttard et al.

Applicants traverse the above rejections, but in the interest of expediting prosecution have amended the claims to more particularly define the invention over the cited references.

The primary references in the above rejections are McKean et al., Simpson and Pecone. The Office Action admits that McKean et al., Simpson and Pecone fail to disclose, teach or suggest a task coordination data object that represents discrete partitions of the task to be performed.

However, in each of the rejections, the Office Action states that Moriyama discloses task coordination data object that represents discrete partitions of the task to be performed.

Moriyama discloses a method for communication between objects wherein the communication mechanism of a first object and the communication mechanism of a second object differ. A mailer function is provided for each of the first and second objects for realizing message delivery between the first and second objects. Accordingly, Moriyama discloses

different objects with different functions and provides a mailer function for each object for realizing message delivery between the first and second objects.

However, Moriyama fails to suggest a controller initiating a task to be performed by dividing the task into partitions that may be independently processed by the plurality of controllers. Moreover, Moriyama fails to suggest the creation and use of a task coordination data object that represents discrete partitions of task instructions that may be performed independently and states for each partition of task instructions to allow the plurality of controllers to cooperate in the execution of the task. Rather, Moriyama merely provides a method for establishing data communication between objects or between object-oriented programming systems. Communication is handled using a tag (Tag) for controlling the synchronization and parallelism of communication between objects proper to different communication mechanisms having different properties or interfaces. These tags are communicated along with the communication message.

In addition, Moriyama fails to suggest controllers performing steps of task independently of the other, wherein a free controller selects a partition of task instructions of the task available for processing as indicated by the states for each partition of task instructions.

Thus, because McKean et al., Simpson, Pecone and Moriyama fail to disclose, teach or suggest a controller of a plurality of controllers that initiates a task to be performed, wherein the controller initiating the task establishes a task coordination data object shared by the plurality of controllers, the task coordination data object representing discrete partitions of task instructions that may be performed independently and states for each partition of task instructions to allow the plurality of controllers to cooperate in the execution of the task, and wherein the controllers perform steps of task independently of the other so that a free controller of the plurality of

controllers can select a partition of task instructions of the task available for processing as indicated by the states for each partition of task instructions.

Stuttard et al. fail to overcome the deficiencies of McKean et al., Simpson, Pecone and Moriyama et al. Stuttard et al. merely discloses a semaphore communication scheme. Stuttard et al. does not mention establishing a task coordination data object shared by a plurality of controllers.

Moreover, Stuttard fails to disclose, teach or suggest the use of the task coordination data object representing discrete partitions of task instructions that may be performed independently and states for each partition of task instructions to allow the plurality of controllers to cooperate in the execution of the task. Still further, Stuttard fails to disclose, teach or suggest that the controllers perform steps of a task independently of the other controllers so that a controller of the plurality of controllers can select a partition of task instructions of the task available for processing as indicated by the states for each partition of task instructions.

Stuttard merely discloses a semaphore controller that is used to control synchronization between instruction streams. According to Stuttard, if a resource is in use by a thread, then the semaphore controller indicates this to the other threads using a semaphore scheme so that the resource is unavailable to the other threads.

Therefore, Applicants respectfully submit that claims 1, 12, 23, 34 and 42 are patentable over McKean et al., Simpson, Pecone, Moriyama et al. and Stuttard et al.

Dependent claims 2-11, 13-22, 24-33 and 35-41 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 1, 12, 23 and 34 respectively. Further dependent claims 2-11, 13-22, 24-33 and 35-41 recite additional novel elements and limitations. Applicants reserve the right to argue independently the

patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 2-11, 13-22, 24-33 and 35-41 are patentable over the cited references.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 423-757-0264.

Respectfully submitted,

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